PROPERTIES OF THREE LAYERS HYBRID PARTICLEBOARD FROM SAWDUST AND *Acacia mangium*

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ABSTRACT

PROPERTIES OF THREE LAYERS HYBRIDS PARTICLEBOARD FROM SAWDUST AND *Acacia mangium*

The shortage of wood supply as raw material has forced wood-based industries to find alternative raw materials. This study was undertaken to determine the properties of hybrid particleboard from sawdust and *Acacia mangium* of different density (500, 600,700 kg/m^3) and resin content (8:10:8 and 12:10:12). Experimental hybrid particleboard from sawdust and *Acacia mangium* were bonded with urea formaldehyde (UF) with resin content 8:10:8 and 12:10:12 with the density 500, 600,700 kg/m^3. The physical and mechanical properties were accessed. The result shows that the sawdust and *Acacia mangium* improves some properties of hybrid particleboard, such as bending strength, internal bonding strength and the density except thickness swelling and water absorption. The panels with resin content 12:10:12 showed better MOR, MOE and internal bonding compared to panels with resin content 8:10:8. The density 500, 600 and 700 kg/m^3 of panels manufactured using the resin content 12:10:12 was higher compared to panels with resin content 8:10:8. Thickness swelling and water absorption rate decreased when the resin content increased.